	Application No.	Applicant(s)
Notice of Allowability	09/784,352	HEUER, JOERG
	Examiner	Art Unit	
	Chongshan Chen	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *2/10/2005*.

2. ☒ The allowed claim(s) is/are *1,2,4,5,7-13,15,16,18-22,34,36 and 38*.

3. ☒ The drawings filed on *16 February 2001* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some*   c) ☐ None of the:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20050318* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

JEAN M. CORRIELUS
PRIMARY EXAMINER

DETAILED ACTION

1.   This action is responsive to Amendment filed on 10 February 2005.

EXAMINER'S AMENDMENT

2.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

Darleen J. Stockley on 18 March 2005.

The application has been amended as follows:

Please cancel claims 6, 17 and 39-41.

Please replace claims 1, 7-9, 12, 18-20, 34, 36 and 38 as follow:

Claim 1.   Method for querying a database with database contents <u>stored in a computer</u>

<u>readable medium</u> with a database structure comprising:

placing a query in a query structure that differs from the database structure,

wherein the query structure and the database structure are derived from a standard

structure by using a reference logic,

wherein the standard structure is described by standard descriptors,

wherein the query structure and the database structure are described by at

least one of the standard descriptors and special descriptors, and

wherein the special descriptors and the content of the special descriptors

are derived from at least one of the standard descriptors by using the reference logic,

transmitting the query to the database;

making the reference logic available to the database by at least one of:

transmitting at least part of the reference logic together with the query; ~~and~~ or

the reference logic being at least partially present in the database,

~~generating a query result for a standard descriptor of the query structure that is unknown~~

~~to the database structure by using the reference logic associated with the unknown standard~~

~~descriptor and a special descriptor of the database that is associated with the reference logic, or~~

~~generating a query result for a special descriptor of the query structure that is unknown to~~

~~the database structure by using the reference logic associated with the unknown special~~

~~descriptor and the standard descriptor of the database that is associated with the reference logic.~~

if the standard descriptors of the query structure and the standard descriptors of the

database structure are dissimilar, a special descriptor of the database structure can be inferred

from the standard descriptor of the query structure by means of the reference logic, or

if the special descriptors of the query structure and the special descriptors of the database

structure are dissimilar, a standard descriptor of the database structure can be inferred from the

special descriptor of the query structure by means of the reference logic,

wherein if the special descriptors of the query structure and the special descriptors of the

database structure are dissimilar, dissimilar special descriptors are reviewed to determine

whether a computation logic is present in the database, so that a respective special descriptor of the database structure can be computed directly from the corresponding special descriptor of the query structure by means of the computation logic.

Claim 7.   Method as claimed in Claim 1, wherein the computation logic is stored in the database.

Claim 8.   Method as claimed in Claim 7, wherein, for the special descriptors of the database structure that are dissimilar to the special descriptors of the query structure for which no computation logic is present, a review is made to determine whether a reference logic to standard descriptors is at least partially present in the database.

Claim 9.   Method as claimed in Claim 7, wherein, for the special descriptors of the database structure that are dissimilar to the special descriptors of the query structure for which no computation logic and/or no reference logic is present, a review is made to determine whether the reference logic was transmitted together with the query.

Claim 12.   Computer readable media embodying a database structure to execute a method comprising:

placing a query in a query structure that differs from the database structure,

wherein the query structure and the database structure are derived from a standard structure by using a reference logic,

wherein the standard structure is described by standard descriptors,

wherein the query structure and the database structure are described by at

least one of the standard descriptors and special descriptors, and

wherein the special descriptors and the content of the special descriptors

are derived from at least one of the standard descriptors by using the reference logic,

transmitting the query to the database;

making the reference logic available to the database by at least one of:

transmitting at least part of the reference logic together with the query; ~~and~~ or

the reference logic being at least partially present in the database,

~~generating a query result for a standard descriptor of the query structure that is unknown~~

~~to the database structure by using the reference logic associated with the unknown standard~~

~~descriptor and a special descriptor of the database that is associated with the reference logic, or~~

~~generating a query result for a special descriptor of the query structure that is unknown to~~

~~the database structure by using the reference logic associated with the unknown special~~

~~descriptor and the standard descriptor of the database that is associated with the reference logic.~~

if the standard descriptors of the query structure and the standard descriptors of the

database structure are dissimilar, a special descriptor of the database structure can be inferred

from the standard descriptor of the query structure by means of the reference logic, or

if the special descriptors of the query structure and the special descriptors of the database

structure are dissimilar, a standard descriptor of the database structure can be inferred from the

special descriptor of the query structure by means of the reference logic,

wherein if the special descriptors of the query structure and the special descriptors of the

database structure are dissimilar, dissimilar special descriptors are reviewed to determine

whether a computation logic is present in the database, so that a respective special descriptor of

the database structure can be computed directly from the corresponding special descriptor of the

query structure by means of the computation logic.

Claim 18.   Computer readable media as claimed in Claim 12, wherein the computation

logic is stored in the database.

Claim 19.   Computer readable media as claimed in Claim 18, wherein, for the special

descriptors of the database structure that are dissimilar to the special descriptors of the query

structure for which no computation logic is present, a review is made to determine whether a

reference logic to standard descriptors is at least partially present in the database.

Claim 20.   Computer readable media as claimed in Claim 18, wherein, for the special

descriptors of the database structure that are dissimilar to the special descriptors of the query

structure for which no computation logic and/or no reference logic is present, a review is made to

determine whether the reference logic was transmitted together with the query.

Claim 34.   A method of querying a plurality of databases stored in computer readable media,

comprising:

    submitting a query in an original query structure to a plurality of databases; and

separately revising the original query structure at each of the databases, to produce query

structures searchable within the respective databases,

wherein the original query structure is revised in a decentralized fashion, without

middleware,

wherein the query structure and the database structure are derived from a standard

structure by using a reference logic,

wherein the standard structure is described by standard descriptors,

wherein the query structure and the database structure are described by at least

one of the standard descriptors and special descriptors, and

wherein the special descriptors and the content of the special descriptors are

derived from at least one of the standard descriptors by using the reference logic,

transmitting the query to the database;

making the reference logic available to the database by at least one of:

transmitting at least part of the reference logic together with the query; and or

the reference logic being at least partially present in the database,

~~generating a query result for a standard descriptor of the query structure that is unknown~~

~~to the database structure by using the reference logic associated with the unknown standard~~

~~descriptor and a special descriptor of the database that is associated with the reference logic, or~~

~~generating a query result for a special descriptor of the query structure that is unknown to the~~

~~database structure by using the reference logic associated with the unknown special descriptor~~

~~and the standard descriptor of the database that is associated with the reference logic.~~

if the standard descriptors of the query structure and the standard descriptors of the database structure are dissimilar, a special descriptor of the database structure can be inferred from the standard descriptor of the query structure by means of the reference logic, or

if the special descriptors of the query structure and the special descriptors of the database structure are dissimilar, a standard descriptor of the database structure can be inferred from the special descriptor of the query structure by means of the reference logic,

wherein if the special descriptors of the query structure and the special descriptors of the database structure are dissimilar, dissimilar special descriptors are reviewed to determine whether a computation logic is present in the database, so that a respective special descriptor of the database structure can be computed directly from the corresponding special descriptor of the query structure by means of the computation logic.

Claim 36.   A method of querying a plurality of databases stored in computer readable media, comprising:

submitting a query to a plurality of databases, the query containing information fields not contained in all of the databases; and

separately searching for the query at the plurality of databases, each database using a reference logic at the database to infer a relationship between fields in the database and fields in the query not contained in the database,

wherein each database infers the relationship in a decentralized fashion, without middleware,

wherein structure of the query and structure of the database are derived from a standard

structure by using a reference logic,

wherein the standard structure is described by standard descriptors,

wherein the structure of the query and the structure of the database are

described by at least one of the standard descriptors and special descriptors, <u>and</u>

wherein the special descriptors and the content of the special descriptors

are derived from at least one of the standard descriptors by using the reference logic,

transmitting the query to the database;

making the reference logic available to the database by at least one of:

transmitting at least part of the reference logic together with the query; ~~and~~ <u>or</u>

the reference logic being at least partially present in the database,

~~generating a query result for a standard descriptor of the query structure that is unknown~~

~~to the database structure by using the reference logic associated with the unknown standard~~

~~descriptor and a special descriptor of the database that is associated with the reference logic, or~~

~~generating a query result for a special descriptor of the query structure that is unknown to~~

~~the database structure by using the reference logic associated with the unknown special~~

~~descriptor and the standard descriptor of the database that is associated with the reference logic.~~

<u>if the standard descriptors of the query structure and the standard descriptors of the</u>

<u>database structure are dissimilar, a special descriptor of the database structure can be inferred</u>

<u>from the standard descriptor of the query structure by means of the reference logic, or</u>

if the special descriptors of the query structure and the special descriptors of the database

structure are dissimilar, a standard descriptor of the database structure can be inferred from the

special descriptor of the query structure by means of the reference logic,

wherein if the special descriptors of the query structure and the special descriptors of the

database structure are dissimilar, dissimilar special descriptors are reviewed to determine

whether a computation logic is present in the database, so that a respective special descriptor of

the database structure can be computed directly from the corresponding special descriptor of the

query structure by means of the computation logic.

Claim 38.   A method of querying a plurality of databases stored in computer readable media,

comprising:

submitting a query in an original query structure to a plurality of databases; and

separately revising the original query structure at each of the databases, independently of

middleware, to produce query structures searchable within the respective databases,

wherein the query structure and the database structure are derived from a standard

structure by using a reference logic,

wherein the standard structure is described by standard descriptors,

wherein the query structure and the database structure are described by at least

one of the standard descriptors and special descriptors, and

wherein the special descriptors and the content of the special descriptors are

derived from at least one of the standard descriptors by using the reference logic,

transmitting the query to the database;

making the reference logic available to the database by at least one of:

transmitting at least part of the reference logic together with the query; ~~and~~ or

the reference logic being at least partially present in the database,

~~generating a query result for a standard descriptor of the query structure that is unknown~~

~~to the database structure by using the reference logic associated with the unknown standard~~

~~descriptor and a special descriptor of the database that is associated with the reference logic, or~~

~~generating a query result for a special descriptor of the query structure that is unknown to~~

~~the database structure by using the reference logic associated with the unknown special~~

~~descriptor and the standard descriptor of the database that is associated with the reference logic.~~

if the standard descriptors of the query structure and the standard descriptors of the

database structure are dissimilar, a special descriptor of the database structure can be inferred

from the standard descriptor of the query structure by means of the reference logic, or

if the special descriptors of the query structure and the special descriptors of the database

structure are dissimilar, a standard descriptor of the database structure can be inferred from the

special descriptor of the query structure by means of the reference logic,

wherein if the special descriptors of the query structure and the special descriptors of the

database structure are dissimilar, dissimilar special descriptors are reviewed to determine

whether a computation logic is present in the database, so that a respective special descriptor of

the database structure can be computed directly from the corresponding special descriptor of the

query structure by means of the computation logic.

Allowable Subject Matter

3.   Claims 1, 2, 4, 5, 7-13, 15, 16, 18-22, 34, 36 and 38 are allowed over prior art that made

of record.

Reasons for Allowance

4.   The following is an examiner's statement of reasons for allowance:

The present invention relates to a method for querying a database with database contents

that have a database structure. The query is made in a query structure, which differs from the

database structure in that the query structure and the database structure reference a standard

structure, and the reference logic is not stored in a middleware, it is at least partially transmitted

together with the query and/or is at least partially present in the database.

Machihara et al. (US 6,233,578 B1) teach retrieval of meta-information using middleware

prior to carrying out a desired user information retrieval. The information retrieved by the

middleware is stored in the information resource dictionary (IRD). The operation of the

information retrieval system includes using the IRD, and further, use of the middleware section,

so that the target database system 180 is accessed. Machihara teaches away from the present

invention because the present invention does not utilize middle between the user and the

database. The reference logic is at least partially transmitted together with the query and/or is at

least partially present in the database.

Kappenberger et al. (US 6,345,269 B1) teach using an interpreter which receives the

query from the user and performs as middleware between the user and the database. The present

invention does not utilize middleware.

Brown et al. (US 6,397,225 B1) does not disclose the reference logic to evaluate

unknown standard/special descriptors by known special/standard descriptors. Brown simply

states to construct a database command in the case where no corresponding column name for a

program variable name can be found. However, Brown fails to disclose that both a reference

logic is used for both referencing the descriptor to the associated unknown descriptor and the

content transformation.

Lennon (Pub. No.: US 2003/0208473 A1) does not disclose if the standard descriptors of

the query structure and the standard descriptors of the database structure are dissimilar, a special

descriptor of the database structure can be inferred from the standard descriptor of the query

structure by means of the reference logic, or if the special descriptors of the query structure and

the special descriptors of the database structure are dissimilar, a standard descriptor of the

database structure can be inferred from the special descriptor of the query structure by means of

the reference logic, wherein if the special descriptors of the query structure and the special

descriptors of the database structure are dissimilar, dissimilar special descriptors are reviewed to

determine whether a computation logic is present in the database, so that a respective special

descriptor of the database structure can be computed directly from the corresponding special

descriptor of the query structure by means of the computation logic.

The prior art of record alone or in combination does not fairly teach or suggest "the

special descriptors and the content of the special descriptors are derived from at least one of the

standard descriptors by using the reference logic, transmitting the query to the database; making

the reference logic available to the database by at least one of: transmitting at least part of the

reference logic together with the query; or the reference logic being at least partially present in

the database, if the standard descriptors of the query structure and the standard descriptors of the

database structure are dissimilar, a special descriptor of the database structure can be inferred

from the standard descriptor of the query structure by means of the reference logic, or if the

special descriptors of the query structure and the special descriptors of the database structure are

dissimilar, a standard descriptor of the database structure can be inferred from the special

descriptor of the query structure by means of the reference logic, wherein if the special

descriptors of the query structure and the special descriptors of the database structure are

dissimilar, dissimilar special descriptors are reviewed to determine whether a computation logic

is present in the database, so that a respective special descriptor of the database structure can be

computed directly from the corresponding special descriptor of the query structure by means of

the computation logic" in claim 1, 12, 34, 36 and 38, and conjunction with all other limitations of

the dependent and independent claims. Therefore, all pending claims 1, 2, 4, 5, 7-13, 15, 16, 18-

22, 34, 36 and 38 is hereby allowed.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chongshan Chen whose telephone number is (571)272-4031.

The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John E Breene can be reached on (571)272-4107. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chongshan Chen
March 18, 2005

JEAN M CORNIELUS
PRIMARY EXAMINER